

REMARKS***Discussion of Amendments***

With the entry of the present claim amendments, claims 1-7 and 37-39 will be pending. Claims 1, 38, and 39 have been amended to specify that the claimed surface coated phosphor is configured as a coating in a display device. Applicants reserve their right to pursue any unclaimed subject matter by means of a continuing application. No new matter is added by this amendment. The amendment to the claims is discussed in further detail below in the Discussion of Rejections.

The Office Action

The Office Action set forth the following rejections:

1. claims 1-7, 36, and 37 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Ronda et al. (U.S. Patent No. 6,150,757); and
2. claims 2-6 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ronda et al. (U.S. Patent No. 6,150,757) in view of discussion provided by the Office.

Discussion of Rejections

In paragraph 2 of the Office Action, claims 1-7, 36, and 37 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Ronda et al. Anticipation under 35 U.S.C. § 102(b) requires that an anticipatory reference must describe each and every element of the claim. *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) cited in MPEP § 2131. In addition, the anticipatory reference must describe the elements in the arrangement as required by the claim. *See In re Bond*, 910 F.2d 831, 15, USPQ2d 1566 (Fed. Cir. 1990) cited in MPEP § 2131. Rhonda satisfies neither of these requirements. The claims of the present application recite surface coated phosphors configured as a coating in a display device. Rhonda neither explicitly nor inherently discloses such a coating. Rather, Rhonda's phosphors are specifically configured for a mercury vapor lamp. Accordingly, Rhonda cannot anticipate the claims of the present invention and the rejection should be withdrawn.

In paragraph 3 of the Office Action, claims 2-6 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rhonda in view of discussion provided by the Office. Rhonda discloses barium-magnesium aluminate (BAM) type phosphors. The Office alleged that it is “well-established” in the art of mercury discharge lamps that sulfide phosphor and the phosphors exemplified in Rhonda are known as UV-A phosphors and provide equally satisfactory reflectance. The Office further alleged that ZnS:Cu phosphor provides the additional advantage of “decorative uniqueness” to the lamp. The Office cited Juestel et al. (U.S. Patent No. 6,888,302) as an example for teaching the use of ZnS:Cu in a mercury vapor lamp.

Applicants respectfully submit that the Office failed to make a *prima facie* case for obviousness. One of skill in the art would not substitute a sulfide phosphor, e.g., ZnS:Cu, for the BAM phosphor in Rhonda, because to do so would undermine the operability and express goal of Rhonda. Rhonda, at col. 1, lines 50-53, states (emphasis added): “The invention has for its object to provide a method of coating a luminescent material with a metal oxide which leads to a product which has a comparatively *low mercury absorption* when used in a low-pressure discharge lamp.” As described in the background section of Rhonda, mercury absorption damages the phosphors of mercury vapor lamps. Consequently, any alteration in Rhonda that could possibly increase mercury absorption would be contrary to the teachings of Rhonda and the understanding of those of skill in the art.

Those of ordinary skill in the art would expect that sulfide phosphors would absorb mercury more readily than BAM phosphors; note Hg and Zn are transition metals of Group IIb of the periodic table; as such, they share many similar properties, for example, reactivity towards sulfur. Thus, those of skill in the art would expect that mercury and zinc form compounds (sulfides) that can form solid solutions readily. One of ordinary skill in the art would, therefore, not be motivated to substitute a sulfide phosphor for a BAM phosphor in Rhonda’s coated phosphors. Even though there is an oxide coating over the phosphor, it would be imprudent to replace the BAM phosphor with a mercury absorbing phosphor such as a sulfide phosphor. If there is a defect in the coating, e.g., a pinhole, that defect would provide access to mercury vapors. The mercury vapor could combine with the zinc sulfide with the result that the quality of the phosphor would degrade. In view of the foregoing, to make the substitution that the Office envisages would materially and negatively affect Rhonda’s phosphors. If a proposed modification would render the prior art invention being

modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) as cited in MPEP § 2143.01. Accordingly, a *prima facie* case of obviousness has not been established and the rejection should be withdrawn.

Further, Rhonda's BAM phosphor is a UV lamp excited phosphor whereas ZnS would not be used in this way. ZnS is used as a CRT phosphor when activated with Cu (green), or Ag (blue) and also as a thin film EL phosphor when doped with Mn, also a powder EL phosphor when doped with all of above. Thus, the mode of use of sulfide phosphors is different than that of the BAM phosphor. Those of ordinary skill in the art cannot therefore find motivation to substitute an UV excited phosphor with a CRT phosphor, a thin film EL phosphor, or a powder EL phosphor. If such a modification is attempted, it would be akin to substituting orange pieces in a recipe calling for chopped apple. Thus, the proposed modification would be impracticable or unsatisfactory.

Moreover, applicants have amended the claims to recite that the phosphor is configured as a coating in a plasma display device. Rhonda fails to suggest the presently claimed invention to those of ordinary skill in the art. When all elements of the claimed invention are not suggested by the cited reference, then obviousness cannot exist. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art.").

In view of all of the foregoing, the obviousness rejection should be withdrawn.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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